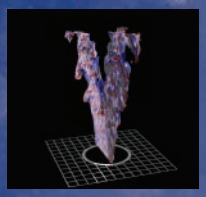
ADVANCED SCIENTIFIC COMPUTING RESEARCH

The Advanced Scientific Computing Research (ASCR) program mission is to discover, develop, and deploy the computational and networking tools that enable scientific researchers to analyze, model, simulate, and predict complex phenomena important to the U.S. Department of Energy.

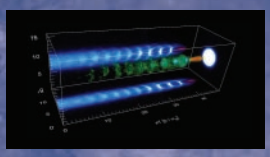
RECENT SCIENTIFIC ACHIEVEMENTS

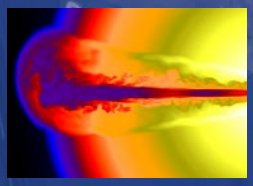


Creating laboratory-scale simulations of turbulent flames for greater insight into reducing pollutants, increasing combustion efficiency

Understanding microturbulence in plasmas advances the design of fusion reactors as potential energy sources of the future

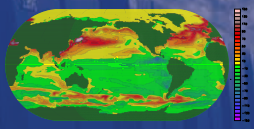
Plasma-driven particles offer promise of reducing the size of accelerators from kilometers to meters, for expanded use in medicine and research



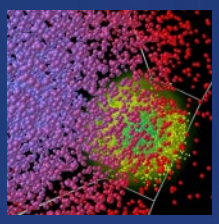


Using satellites, telescopes, and advanced computer simulations, astrophysicists have solved a 30-year-old question on the origins of gamma ray bursts

Improving the accuracy of complex models for understanding global climate change



FastBit enables researchers to quickly find significant scientific results in massive experimental datasets at speeds 10 times faster than commercial search techniques



MAJOR USER FACILITIES

Leadership Computing Facilities provide users with large amounts of computing time on some of the most advanced computing resources anywhere to tackle some of the most challenging scientific problems.

Oak Ridge National Laboratory
Argonne National Laboratory

The National Energy Research Scientific Computing Center provides leading-edge computing resources to support more than 2,500 researchers at national laboratories and universities across the nation.

Lawrence Berkeley National Laboratory

The Energy Sciences Network is a high-speed network providing high-bandwidth to enable thousands of researchers at national laboratories, universities, and other institutions to communicate with each other using the collaborative capabilities needed to address some of the world's most important scientific challenges.

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